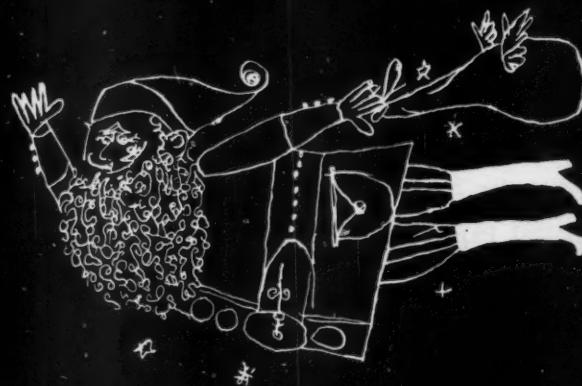


Vol. 3, No. 4 December, 1961

# AACE BULLETIN

MERRY  
CHRISTMAS



IN THIS ISSUE: Short-Cut Estimating Techniques - I  
Member of the Moment  
News from the Regions



# AACE BULLETIN

VOL. 3, No. 4

December, 1961

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Cover: Monsanto Chemical Co.'s Barton Plant at Luling, La. Process area in background is steam reforming area of ammonia plant. Merry Xmas sign is affixed to ammonia synthesis reactors.

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## Notes from the Technical Editor

To each and every AACE'r:  
Come fill the cup with  
Yuletide cheer  
and let's resolve for '62  
that once again we shall  
renew  
the aim to further our  
profession  
by all the means in our  
possession.  
Let's make the word,  
"cooperation,"  
the password in our  
operation.  
For cooperation's been  
the key  
to open the editor's door  
for me.  
So let me here express my  
thanks  
to all of you within the  
ranks.  
And single out for extra  
mention  
a few deserving special  
attention:  
To Edward Shanken and  
Cecil C.,  
to Charlie Hirt and to  
Elsie E.,  
to John Hackney and  
William Schall —  
my thanks to one, my  
thanks to all.  
And now a note in a  
serious vein  
(though some may call it  
"the old refrain").  
In the spirit of this  
joyous season,  
may the New Year bring  
an age of reason  
which leads us not to war  
infernal,  
but rather to a peace  
eternal.

# Message from the President



Charles R. Hirt

The Procter & Gamble Company  
President of AACE

Although the automobile industry is now proudly displaying the 1962 models, and heralding new standards of luxury, new standards of economy and new standards of performance, you'll have to make do with your 1961 model AACE for a few more months.

Because of the recent Amendments to our Constitution and By-laws, our new 1962 model Board of Directors will not be available to you until July 2, 1962. Of course, like the automobile-buying public, we will be expecting high standards of performance from the 1962 models, but until July 2, the old 1961 model will continue to give you dependable service to the best of our ability.

Thinking about model changeovers and the approaching calendar year-end, it seems appropriate to take stock of the accomplishments of the Association, and then to appraise the prospects for the months ahead.

Looking back particularly over the past year, in consideration of the Objects of the Association as stated in our Constitution, we must say that it has been a satisfactory year—a year of progress. I hope that when you too, reflect on our activities, you will draw a similar conclusion. Although we have not yet attained all the goals that we hoped for, the forward strides which we did make have been significant. As a matter of fact, I believe that 1961 can be characterized as a year which has established a new base line for the future growth and professional service of our association.

- Constitutional Amendments to the Objects

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have clarified and reaffirmed our intent to provide service and continually strive to improve our ability to serve the public interest. These changes also permit us to conclude our negotiations with the Internal Revenue Service. Action is proceeding on this important subject.

- Constitutional Amendment dealing with the change in term of office will significantly improve the effectiveness of the Board of Directors and most of the committee activities.
- Four new regional sections recognized this year have added new strength to the Association and extended our service with added authority into Canada and England.
- Organization Manual has become a reality, and is now receiving its final editing for release for publication. It should be in the hands of the regional sections, committee chairmen and the Board by late winter.
- Additional help was employed, and some changes made to improve the publication of the *Bulletin*. We should see continuing improvements resulting from these decisions.
- Our application for membership in the Engineers Joint Council reportedly is being given favorable consideration. By the time you read this, we should have a final decision. If we are accepted, it will bring us important professional recognition and opportunities.

Editor's Note:

At a Board of Directors meeting of the Engineers Joint Council, on November 17th, the AACE was officially accepted for membership.

- Annual meetings and regional section meetings have been producing a satisfactory volume of competent technical information along with the opportunities for exchanging experiences of mutual interest.

- Membership has grown more than 10%.

The work of various committees sometimes appears to move painfully slow, but progress is definitely being made in the important development of solutions to our many problems. And the members who are contributing their time to these activities deserve the appreciation of us all.

- Members working to provide you with an outstanding convention in Chicago in June are hard at work and already demonstrating sub-

(Continued on page 89)

# Developing Short-Cut Estimating Techniques-I

Estimating Committee, Metropolitan New York Section, AACE

Don't let the subject of this paper fool you. We don't intend to hand an estimating system to you. Nor do we presume to tell you how to estimate because we realize that the definition of short-cut estimating isn't universal; design practices, purchasing and construction abilities of each of us is different enough so that one set of formulas won't satisfy all.

What we want to do is provide you with the information which will enable quick estimating when time is not available, as well as quick checking of a detailed estimate. To do this, we will:

- Describe, in detail, three methods of estimating the cost of a project—methods which do not involve a complete list of the materials required.
- Outline the data collection and analysis process to enable you to pursue a development along these lines.
- Relate the importance and objective of a feedback system in explaining deviation between the job and estimate, and in readjusting the estimating system to conform with the latest procedures in any industry or application.

---

The N. Y. Section Estimating Committee, author of this paper, was chaired by Stanley A. Gertz. Other members of the committee: Donald Brosnan, Walter Brower, Charles F. Chatfield, Robert F. Dennee, Wesley Dodge, Elsie Eaves, Martin J. Gibson, Kenneth M. Guthrie, Joseph Shapiro.

Engineers spend a tremendous number of hours each year in trying to explain differences between one estimate and another when they don't have a common base. And, it isn't possible to develop any system relating completed jobs unless these jobs are adjusted to this same common base. We've therefore included a section dealing with adjustment to common based estimates to point out areas which may cause significant differences and which may be somewhat obscure.

In general, we are not offering a panacea for all cost engineers, but rather a starting point from which you can develop your own quick estimating techniques.

## Short-Cut Methods

If the actual costs of construction projects or their components are reduced to a common base and analyzed, the results will indicate empirical relationships between various groups of costs. This makes possible the development of short-cut methods and procedures for preparing estimates. Three such methods are percentage estimating, ratio by capacity, unit cost estimating.

None of these techniques are new. However, we believe a thorough description of each—with an analysis indicating the advantages and applications for each method—will provide sufficient information for you to set up your own short-cut factors, and will prompt you to investigate and develop new short-cut methods.

## Percentage Estimating

This method requires the analysis of the various project components with respect to one particular item or one class of items. The basic item should be a major cost component of the project—one which usually doesn't require a bulk take-off and which can be easily and accurately priced. Three such items are process equipment, process equipment plus piping in a chemical plant, building shell in civil work.

Once the cost of the basic item has been established, the next step is to determine the cost relationship of the other components as a percentage. The following are some suggested components:

Chemical process projects—equipment erection, piping, insulation, instrumentation, electrical, substructures, superstructures, painting, engineering, field expense (if not already included).

Civil projects—carpentry and millwork, sash and glazing, insulation, floor covering, plumbing, heating, ventilating, air conditioning, electrical, sprinkler, painting, engineering, field expense (if not already included).

To have a usable short-cut method, a group of similar projects should be similarly analyzed, e.g. fluids, fluids—solids or solids processing chemical plants; single or multi-story office buildings. A range of factors, obtained for each component, will be the cost engineer's tool for estimating the cost of

similar components of future projects.

Since a range, rather than a single factor, is obtained, the cost engineer must exercise considerable judgment in the use of this method. A further analysis of each component to try to determine the cause of its variations will be an aid in estimating the cost of the component in future projects.

In some instances, variations in cost of the component being analyzed are independent of the variation in cost of the basic item. These components—e.g., process buildings, site development, utilities—must be estimated independently by other methods, or their estimated cost must be adjusted to account for this variation.

Skill and judgment must be exercised in the selection of the most appropriate factor in each group. As an example of a guide to the choice of a proper factor, a comparison of ratios of piping, insulation and instrumentation to process equipment in several organic chemical plants is shown in Table A—with a summary of the key factors affecting these component ratios.

#### Ratio by Capacity Estimating

This form of short-cut esti-

mating is an adaptation of the well known exponential rule to find the cost of a project or a component of the same type, but of a larger or smaller size.

Application of the exponential rule to estimating complete projects is based on the empirical fact that the appurtenances (e.g., piping, electrical, substructures, superstructures) of a plant or a complete section of a plant will vary in direct proportion to a major item of cost such as equipment. Since cost and size (or capacity) of the major item varies by some power factor, this factor can be used in determining the cost of a plant or complete section of a different capacity using the same or a similar process. Mathematically, this can be expressed as: New Cost = Known Project Cost

$$\left( \frac{\text{New Project Size}}{\text{Known Project Size}} \right)^x$$

To develop the proper exponential factor to be used, the final cost of a number of various sized installations of a particular type, and with common base, are needed. The accuracy of this method can be increased if individual factors are developed for process sections.

A plot of the cost of various sized installations on log-log

paper will develop the exponential factor. And the statistical treatment known as the least squares method can be used to draw the best theoretical line through the resultant points.

Another method is to draw two lines—one, the best minimum cost; the other, the best maximum cost. The data thus obtained will be suitable for not only the cost of a new plant of different size within a specified size range, but it also will give an indication to the range of most probable cost figures. This method is certainly recommended if there is so much scatter in the basic data that a single line would merely be a rough averaging of the plotted points.

If this method is to give results of useful accuracy, whose reliability can be gauged, the data and resulting graphs should be based on the cost engineer's own company experience. Otherwise, it may not be possible to reduce all the data to a common base, the key to this method's usefulness.

#### Unit Estimating

Some groups of items in an estimate lend themselves to the development of unit prices for a complete assembly. For example, electrical motor instal-

Table A

#### Comparison of Ratios of Piping, Insulation and Instrumentation to Process Equipment in Several Organic Chemical Plants

Plant No.	Piping	Insulation	Instrumentation	Key factors affecting component ratios
1	100%	18%	43%	Reaction and distillation, complex process
2	70%	14%	23%	Reaction and distillation
3	73%	15%	15%	Reaction, batch
4	68%	11%	19%	Reaction, continuous
5	62%	4%	18%	Reaction
6	30%	5%	21%	Reaction, batch fluid processing, much solids material handling equipment

lation unit costs can be developed for sets of motor sizes that include each motor's average share of the motor control center, conduit, wiring and push button station. This technique can be readily adapted to give quick, high accuracy costs for such items as process piping, plumbing, cooling tower installation and concrete installation for a company whose design and engineering concept of these items can be considered to be similar for most jobs.

Items comprising over-all unit prices should be related to each other. If a sufficient number of these unit prices are developed, it should be possible to make estimates with less than 15% error in a few hours. A company's over-all unit prices can be developed from standard engineering procedures or from feedback data.

In many companies a study of the design of a number of jobs will reveal a definite relationship between such things as the number of fittings and the linear feet of pipe, or the quantity of form work, reinforcing steel and concrete for specific types of concrete, such as building grade beams and footings. Typical estimates can be made of these assemblies and tabulated for use on any job. An example of the development of over-all unit cost follows:

Assume that ground floor slabs are 6 in. thick and reinforced with 6 in. x 6 in. x #6 x #6 wire mesh reinforcing.

For 1 sq. ft. of floor the following quantities of material will be required:

Concrete  $\frac{1}{2}$  ft. x 1 ft. x  
1/27 = 0.0175 cu. yd.

Wire mesh  
= 1 sq. ft.

#### Materials

Concrete	0.0175 cu. yd.
	x 15 = .26
Wire mesh	1 sq. ft. x
	5.50/100 sq. ft. = 0.05
Misc. materials	= 0.05

Total materials .36

#### Labor

Wire mesh 1 sq. ft. x	
2 man-hr./100 sq. ft. x 4	= .08
Concrete .0175 cu. yd. x	
.9 man-hr./cu. yd. x 3.50	= .06
Finishing 1 sq. ft x .03	
man-hr./100 sq. ft. x 3.50	= 11
Total Labor	.25
Total direct costs	.61
Indirect costs	.14
Total costs	.75
Cost/sq. ft.	.75

#### Common Based Estimates

So far we've discussed three methods of estimating cost of future engineering projects with some reference to statistical data and percentage factors obtained from existing and similar plants. As more data becomes available for analysis, predictions based on this data become more accurate—provided comparisons are reduced to a common base. Let's look at a hypothetical example:

Chemical plant A was built at location A in 1957 to process 100 tons per stream day of ammonia from a feedstock of natural gas and air. This plant cost A million dollars in that year.

Proposed: To build a similar plant, B, at a different location, B, to process 150 tons per stream day from the same feedstock. An estimate of the total investment is required to consider the economic feasibility of the new project.

This type of problem can be

classified as an economic study and appears to have all the requirements of a direct application of any one of the shortcut methods of estimating which we have already discussed.

Individual capacities are known and can be converted to a mathematical ratio. Total dollar cost of plant A is known and can be further broken down by investigation into various categories such as total or individual unit item costs (towers, vessels, pumps), total or individual bulk items costs (piping, steel, concrete), ratio of unit costs to bulk costs in various categories.

In other words, all the necessary data is apparently available to obtain an accurate cost prediction of proposed plant B by manipulating the data available from existing plant A. This, however, is only partly true if any degree of accuracy is expected from the prediction of new plant costs. Other factors exist which can cause deviations to give an inaccurate result.

Before considering these factors or deviations, we must equate the comparison between the new plant B and existing plant A to a common denominator to provide a realistic basis on which to apply the deviation factors. This depends on time variation and cost differential.

**Time Variation**—Plant A was built in 1957 for a cost of A million dollars; plant B is being evaluated today by ratio comparison. Plant B, however, will not be built until some time in the future, say two years hence. This means that there is a differential in time between the established cost of plant A and the projected completion date of plant B with proposal con-

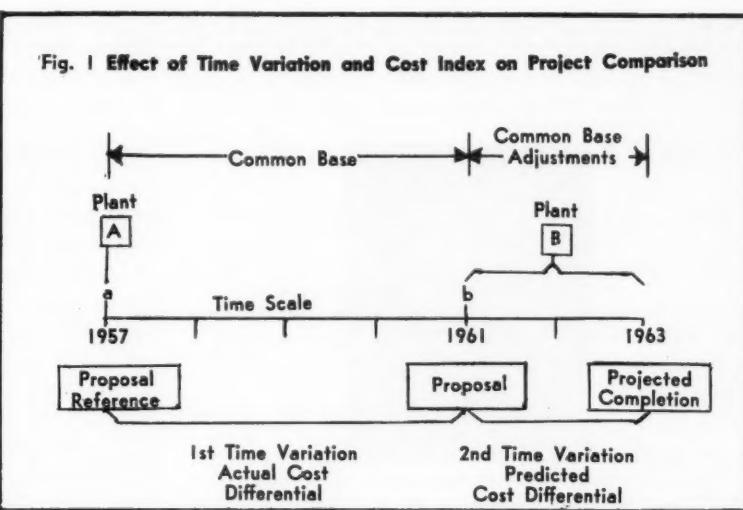
sideration somewhere in between. Costs obtained from 1957 must, therefore, be adjusted to represent the equivalent cost of plant A in 1961 prices before the cost of plant B can be obtained by direct comparison at this time. The cost of plant B must now be adjusted to reflect the further differential between the date of proposal and date of completion in 1963.

**Cost Differential**—Money used for investment must be related to a time reference. Thus, the movement of any known capital investment between any two points in time will create a cost differential during the interval.

The time comparison between plant A and plant B is equivalent to moving a sum of money from point "a" to "b" within a time variation. There must, therefore, be a corresponding cost differential.

This differential is obtained by keeping a constant record of current market prices and labor rates, relating these to one year as a reference and converting to a multiplying factor with that year as base. This factor, known as a cost index, should only be used if the data to obtain it is based on company records. The effect of time variation and cost indices is illustrated in Figure 1.

It is, of course, possible to equate plant A to plant B by means of materials only. In this case it would be necessary to use the material quantities readily available from plant A and apply the actual component prices for 1961. This would result in the total cost for plant A in 1961. And this, in turn, could be factorized into the cost of plant B by a ratio of the capacities.



**Common Base**—The above example shows that, in any comparison between two or more construction projects, the money or material being compared must be related to the effect of a time variation and a cost differential before any ratios can be applied to reflect an increase or decrease of plant capacity or size.

**Deviations from the Common Base**—The discussion of common base estimates has, so far, been concerned with establishing an effective basis from which new projects can be compared with similar and existing types of plants with some degree of accuracy. The comparison has, for the most part, been in terms of money and size of plant only.

There are, however, many other factors to be considered which can cause deviations from this basic comparison. These are not always apparent and can cause misleading results in the final estimate. We propose, therefore, to list some of these factors in three general areas in which these deviations

can occur so that appropriate adjustments can be made to the base estimate.

- **Design**—Change for design specifications, change for material specifications, utility requirements (e.g., air coolers/water cooler, steam drive/electrical drive), waste disposal, plot plan arrangement.
- **Locality**—Local area codes, local safety regulations, climatic conditions, soil analysis, union conditions and labor contracts, productivity, local taxes, freight and foreign charges.
- **Market factors**—Changes in price level, labor rates; buying adverse markets, premium payment to meet schedule deliveries, quantity discounts, changes in value of foreign currency.

This is the first part of a two-part article on "Short-Cut Estimating Methods." The second part—covering techniques for short-cuts estimating (choice of method; data collection, processing and analysis) and estimate feedback—will appear in the March, 1962 issue of the *Bulletin*.

## Member of the Moment: Elsie Eaves



Elsie Eaves  
Manager, Business News Dept.  
*Construction Daily*

First lady of ASCE and first lady of AACE—these are but two of a long list of professional "firsts" for Elsie Eaves, head of the largest research and statistical department in industrial journalism. For, as manager of Business News Department of *Construction Daily*, *Engineering News-Record* and *Construction Methods and Equipment* (all McGraw-Hill publications), Elsie has 100 people working for her—25 in her immediate department in New York, 75 construction news correspondents throughout the U. S. and Canada.

One question always asked of women in the engineering profession is, "What made you go into engineering?" Elsie's answer is a natural bent for mathematics, a childhood spent in a small mining town and a part-time job (while in high school) as a computer on mining surveys. Were it not for Papa Eaves' wish to have his daughter enjoy the benefits of co-educational schooling, Elsie might have accepted a scholarship to Colorado's School of Mines. Instead, she attended the University of Colorado at Boulder, from which she received her B. S. (C.E.) in 1920. Thus mining engineering's loss was civil engineering's gain.

While at school and shortly after graduation, Elsie worked as a draftsman for such industrial and public works offices as the U. S. Bureau of Public Roads, Denver and Rio Grande railroad and Colorado State Highway Department. And she even put on one semester as an instructor

in engineering mathematics at her alma mater.

From 1922 to 1926 Elsie was an office engineer for Colonel Herbert S. Crocker, consulting engineer, and for Crocker & Fischer, contractors in Denver. It was at this last position that she made the contacts which were to bring her East and lead her into the publishing field.

In 1926 Elsie joined McGraw-Hill as director of market surveys for *Engineering News-Record* and *Construction Methods and Equipment*. Then, in 1932, she moved up to the managerial post which she holds today. And it's been in this job that Elsie started to develop her list of "firsts" with such projects as:

- Defining the territory to be covered and editing the pilot issues for *Construction Daily Newsletter*. She manages this nation-wide service published and sold by *Engineering News-Record*.
- Organizing and directing the measurement, by *Engineering News-Record*, of post war planning by the construction industry. This was used by the Committee for Economic Development and ASCE as the official progress report for the industry.
- Converting these post-war planning statistics to develop the first continuous inventory of construction in the planning stage. This is the current *Engineering News-Record* "Backlog of Proposed Construction" which measures volume of new projects on which planning is starting; also the rate at which they are moving off the planning desks into field construction. The backlog of projects on record that are now in the active planning stage is about to push over the \$125 billion mark.
- Organizing and directing for *Engineering News-Record* the identification and listing of construction projects that could go ahead if \$3.5 billions of financing were provided. This evidence helped pass the Federal Loan-Grant legislation used to re-energize construction activity and break the 1931-35 depression. This inventory of needed construction was the granddaddy of today's \$125 billion backlog.
- Originating and making for *Engineering News-Record* the first national inventory of municipal and industrial sewage disposal facilities in 1929, 1935, 1939, 1945, 1953.

Elsie Eaves' professional background, as you can see, has been varied. So are her professional affiliations. In addition to membership and active participation in ASCE and AACE, she is a licensed professional engineer in N. Y. (the first woman licensee in the state, she's been told), member, Queens Chapter of N.Y.S.P.E.; life member, Colorado Society of Engineers; member, Women's Engineering Society, Ltd., London; member, Society of Women Engineers.

She has also been a member of the Committee on Retirement Policy, Gov. Harriman's Conference on Problems of the Aging, Albany, N. Y., October, 1955; delegate to the Conference on Utilization of Woman Power, Women's Bureau, Dept. of Labor, Washington, D. C., 1955; regional speaker's vice chairman and member, National Marketing Committee of the CED and an active CED speaker to promote post-war planning.

As if this were not enough, Elsie has a number of articles and book chapters to her credit and participated, as moderator, on a panel on women in engineering for the National Broadcasting Co.

Does such a dynamic and active professional woman live, eat and breathe civil engineering? No, not completely. What free time she has, Elsie enjoys spending in and around her wonderful old house in Port Washington, N. Y., just off L. I. Sound. (The house was built by an old clipper ship captain who, when he gave up sailing, went into the business of breaking up old ships. Some of the original old ship timber is still visible within the house). Though here, too, her obvious engineering talent is in evidence. For what seems to be every bit of usable wall and under-the-stairs space, she has designed cabinets, closets, drop-leaf tables. And not too long ago she designed and had installed a 15 ft. x 30 ft. swimming pool which she makes use of every day.

On the strictly non-technical side, Elsie looks after her lovely garden, where she grows herbs, e.g., thyme, oregano, basil, basic tools of the good cook—which she is.

This then, is a brief sketch of the first and only woman member of AACE who, with pride, recalls that at one of the first AACE conventions (to which she was invited as a guest speaker), she was among the first to qualify as a member of the Association under a constitutional amendment which was designed to encompass broader industrial areas from which to solicit members.

## What's Happening ...

*Harold F. Stamps*, chairman of the Chicago-Midwest Section, is now a consulting engineer with Harry P. Watson & Associates of Chicago. He was formerly a project engineer with DeLeuw, Cather & Co. of Chicago.

*E. J. Honohan* is now Development Supervisor of Charles Pfizer & Co., Inc. at Brooklyn. He was transferred from Groton, Conn.

*James Bachman* is back in Montreal, Canada after studying at Stanford University last year.

*John Kildea* was promoted from his position of Process Engineer with Gulf Oil Corp., and transferred to the Refining Department of Gulf Eastern Co. in London as Coordinator of Processing and Engineering.

*Carl L. Brown* is now with Euron Research & Development Co. of Pacific Palisades, Calif. He had been Estimator of Contract Pricing with the Rocketdyne Division of the N.A.A. Inc. in Canoga Park, Calif.

**President's Message (Continued from page 83)**  
stantial progress. In the next issue of the *Bulletin* we hope to provide you with more tangible evidence of the program they are arranging for you.

• Membership Committee, now under the chairmanship of Herman Chapman, of the Atlantic Refining Co., is aggressively pursuing both short-range and long-range goals which should yield real benefits to the Association.

• Planning Committee is exploring ways to further improve the administration of the Association; but more important, it is also studying ways to improve the Association's service to members and the professional community.

It is clear to the Board of Directors and to me that the success of the Association requires competent leadership, and the hard working ability of energetic members. If you are not now working on some committee, why not volunteer your services in some activity that interests you? Either contact the committee chairman directly or write to Mr. Shanken or one of the Board; the names are listed on the back of this *Bulletin*. The more you put into the Association, the more you will get out of it. Remember that it doesn't matter whose payroll we are on, we are working for ourselves.

With a vigorous group of committeemen and a competent Board putting forth their efforts and experienced thinking toward the sound growth of the multiple segments of our Association, we can look forward to continued progress in the months ahead.

May all the happiness of the Holiday Season ahead enrich you and your families.

## News from the Regions

### British Section

Four directors' meetings have been held to date—July 24 at Kellogg House, August 2 at Bechtel International, September 4 at Kellogg House and September 27 at the Institute of Civil Engineers.

At the July meeting, Chairman Herbert presented a draft proposal for the establishment of a British Association, together with a questionnaire for general distribution and ballot for adoption of AACE standard constitution for regional sections.

At the August session, the adoption of Mr. Herbert's proposal was carried. Among the other items taken up at the meeting was an offer by Dr. Hepner, editor of *Chemical and Process Engineering*, to incorporate—as a separate section in his journal—proceedings of this section. Dr. Hepner proposed a 5-year contract, terminable with 12 months' notice. The pro's and con's of this proposal were discussed and final action tabled until Dr. Hepner could be advised of the directors' views on his offer.

In accordance with results of the postal ballot, the standard constitution for AACE regional sections was adopted at the September meeting. By-laws, as drafted, were formally adopted.

As a result of discussions with Dr. Hepner of *Chemical and Process Engineering*, a modified proposal made by the Leonard Hill Co. to publish section proceedings was adopted. Dr. Hepner will submit his editorials for approval by the Publications Committee; he will also edit a section newsletter, to be published from time to time. Four committees—Articles of Association By-laws, Membership Qualifications, Publicity, Coordination—were established to deal with the formation of a British Cost Engineers Association.

Included on the agenda for the September directors' meeting was the question of how to deal with inquiries about the association received from the Republic of Ireland. The secretary was instructed to advise those interested to consider forming a national section of AACE.

The first issue of the section newsletter was circulated in late September. And the first general membership meeting was held September 27. At this meeting, Mr. Hay of Constructors John Brown presented a paper on estimating for pipeline construction. Reprints of the paper were

circulated before the meeting so that members could prepare their questions in advance.

An interesting paper on pumps was presented by Mr. Hawkes of Gwynne Pumps Ltd. at the November 15th public meeting held at the Institution of Civil Engineers.

Future public meetings are scheduled for January 10, February 21 and April 11, 1962

### Chicago-Midwest Section

A meeting to discuss the 1962 national convention was held on July 27 in the conference room of Amoco Chemical Co.

As a result of the discussion of the technical program at Boston, it was agreed that the plan initiated at Boston—i.e., offering various subjects twice in the program so that all interested could cover all subjects of interest without conflict—be adopted.

Among other items presented at this meeting was a convention organization chart outlining duties and responsibilities of various convention committees.

A second meeting of the section was held on August 24 at Amoco's conference room in the Prudential Building.

Two workshops on construction cost estimating were held at the October 26 meeting at the University Club. Consulting Engineer, Mr. Edward Walff, conducted one on "Electrical Estimating" and Mr. E. J. Mark, Chief Estimator, Pure Oil Co., presented one on "Piping Estimating." Each workshop was repeated so that everyone had an opportunity to participate in both sessions.

The section was also host to the AACE Board of Directors at this meeting, since the Board was convening in Chicago.

Problems in construction cost control was the subject of Mr. Gerald McKee, Jr., President of McKee, Berger, Mansueto, Appraisal and Cost Analysts of Chicago and New York, at the November 30 meeting. Mr. R. F. D'Alton, Chief Estimator, Turner Construction Co. of Chicago also discussed building construction cost estimating at this very interesting and lively session on the practical approach to problems in these subject areas.

### Provisional Cincinnati Section

The third organizational meeting was held at Schullers "Wigwam" Restaurant in Cincinnati on September 28. Fifteen persons representing seven companies attended.

Program Committee Chairman, Mr. C. R. Aufmann, introduced the speaker of the evening, Mr. J. R. Doughty, Superintendent of Utilities Maintenance for the City of Cincinnati. Mr. Doughty gave a very interesting presentation of facts concerning a proposed underground parking garage and bus terminal for the Fountain Square area in Cincinnati.

Following Mr. Doughty's discussion, Mr. R. A. St. John, acting chairman, distributed copies of a proposed constitution and by-laws and requested that suggestions and comments concerning a name for the Cincinnati Area Section, as well as those about the constitution and by-laws, be forwarded to him so that a rough draft could be presented at the next meeting on January 25, 1962.

Nominating Committee Chairman, Mr. W. H. Patterson, presented a proposed slate of officers for the section. Those nominated and later elected were:

President: R. A. St. John, National Lead Company of Ohio

Vice President: Frank Reese, Emery Industries

Secretary: Harry Noll, Procter and Gamble Company

Treasurer: C. R. Rahe, National Lead Company of Ohio

Mr. W. H. Patterson, Procter and Gamble Co. was nominated from the floor and elected as a Director of the Section.

The Geographical Committee report was presented for Mr. Boston by Mr. Aufmann of Procter & Gamble. It recommended that the Cincinnati area section embrace the cities included in a rough circle centered at Cincinnati, and included Louisville, Ashland and Lexington, Kentucky and Indianapolis, Indiana and Columbus, Ohio.

Before adjourning, Mr. St. John urged those present to publicize the Association and recruit new members.

#### Delaware Valley Section

Meetings of the section are set for the fourth Monday of alternate months. Scheduled meeting dates for 1961-62 season: October 23, November 27, January 22, March 26, May 28.

A dinner meeting of the Section was held at the Philadelphia Engineers Club on October 23.

G. E. Hamilton, Chairman of the Local Section Committee on Profitability, was given the

floor to lead a discussion which was primarily concerned with determining the interest of the Local Section on Profitability. Mr. Hamilton stated his committee could propose two (2) objectives, namely; (a) Optimization of equipment and alternates based on rate of return or (b) Assessing overhead costs and allocation of same for an operating plant. Mr. Hamilton was also concerned whether they could gain access to principles used in determining profitability by various companies represented by local members in this area? After considerable discussion, it seemed to be the general consensus of the members in attendance that profitability should be treated as one interesting phase of cost engineering. Albeit, most local members were directly employed in capital cost estimating or control they would have a general interest in, and a desire to learn more about the principles of profitability.

President Jenckes asked that names of local members whose specific interest was in profitability be given to himself or Mr. Hamilton so the committee could be expanded.

Mr. Jenckes announced that (1) Herman A. Chapman had been appointed Chairman of the National Membership Committee and was also a member of the National Publicity Committee and (2) Robert M. Custer had been appointed a member of the National Coordination Committee, of which Elsie Eaves of McGraw-Hill Publications was Chairman.

President Jenckes brought forward the proposition of adopting a Standard Regional Constitution as advocated by the National Organization. He gave six (6) or seven (7) advantages which essentially boil down to the fact that the Association would be in the public interest — dues would then be tax deductible and the National Association could operate much easier having a uniform Regional Constitution for review and amendment. Frederick A. Franks, a member of a local committee which had studied the proposal, moved that we adopt the Regional Standard Constitution. After due discussion and questions, the motion was seconded by Herman A. Chapman and was carried by a voice vote.

President Jenckes announced he would appoint a chairman and a committee specifically for membership of the local chapter. Originally he had thought membership and publicity being so closely aligned that the present Publicity Committee would be sufficient.

M. F. Scully briefly discussed problems of developing programs. G. E. Hamilton agreed to prepare a program on profitability for the November 27 meeting.

Mr. Scully presented an interesting and worthwhile film entitled, "A Bridge is Born" — the story of the Walt Whitman Bridge, courtesy of the Delaware River Port Authority, after which the meeting was duly adjourned at 9:20 P. M.

Mr. Gene E. Hamilton of Sun Oil Company presented a very interesting talk on "Business Venture: Cash Flow Analysis by Computer" at the November 27th meeting at the Engineers Club.

#### Provisional Great Lakes Section

An organizational meeting of the section was held in Detroit on May 3, with 20 members in attendance. At this meeting the following provisional officers were chosen:

President	Lowell Bernhardt
Vice-president	Norman A. E. Quast
Secretary	Joseph H. Neale
Treasurer	John C. Frank

Section activities formally began with a dinner meeting on June 14 at Carsons Chop House, Detroit. G. M. "Red" Hannaford, Elmore Div. controller, Brush Beryllium Co., was the featured speaker. Mr. Hannaford spoke on the engineering approach to cost accounting. A film, "A Look at Dow," was presented. Attendance: 17 members and guests.

The October 11 meeting at Carson's Chop House was called to order by the Acting Chairman, Mr. Norman Quast.

Mr. Couse asked for a clarification of the purpose of accepting a \$1.00 contribution from members and its relationship to dues.

The chairman explained that the Provisional Section, not having received a Charter, could not collect dues and the \$1.00 contribution was to be used to defray expenses until such time as the Regional Section could collect dues. Also, the \$1.00 contribution would be applicable to payment of dues when the Regional Section received its charter.

The chairman called upon Mr. Radoshevich, the chairman of the constitution and by-laws committee, to present the proposed constitution to the membership.

It was moved and seconded that the constitution be adopted as presented. The motion was carried by unanimous affirmative vote.

Mr. Couse asked the chair what was being done to secure new members for the Regional Section. Mr. Bernhardt appointed Mr. Couse chairman of the membership committee.

The chairman introduced Mr. Waite, the Editor of the Quarterly News Letter and expressed the membership's approval for a job well done in presenting the first issue.

The chairman called upon Mr. Franchi, publicity Chairman, for a report. Mr. Franchi reported that copies of the Newsletter were sent to various companies for an expression of interest in the regional section, but it was too early for a report on the replies.

The chairman asked the membership for its views relative to the number and frequency of general meetings. This was presented in light of the number of members and difficulty in obtaining speakers to speak to a small group. This topic was discussed and Mr. Bernhardt directed that the Program Chairman decide the time and place of the next meeting.

Mr. Quast then introduced Mr. Charles Ohlrogge, Supervisor of Estimating, Standards Department of the Dow Chemical Co., the speaker for the evening. Mr. Ohlrogge delivered a paper entitled "Estimating — a Valuable Tool to Industry."

Despite Mr. Ohlrogge's promise to the contrary, the paper was interesting and informative and was followed by an interesting and informative question and answer period.

Mr. C. B. McSwain of Kaighin & Hughes, Inc. of Toledo, Ohio is the featured speaker for the November 28th meeting being held at the Rubaiyat in Ann Arbor, Michigan. Mr. McSwain has a wealth of experience in construction cost estimation with emphasis on problems associated with bidding by a construction contractor.

Tentative schedule for 1961-62, as formulated by Program Chairman, Norman Quast:

December 13 — "How is Cost Control Data Collected?"

January 10 — "How is Cost Control Data Utilized for Future Cost of Product?"

February 14 — "What Production Target to Aim For?"

March 14 — "What Market Research is Required to Sell Your Product?"

April 11 — "Economic Evaluation Studies"

May 9 — "What is Profitability?"

## Gulf Coast Section

A technical meeting was held on Friday, September 22, at the Houston Engineering and Scientific Society Building, Houston, Texas. The speaker of the evening was Robert R. Clarke of the R. R. Clarke Co., Houston. His subject was "Fourth Dimension of Equipment Costing."

The Program Committee was very much gratified to receive a better than 70% response to its recently circulated survey questionnaire. Interest expressed by section members in various subjects will be reflected in future technical meetings.

"Data Processing for Small Volumes of Data" was the subject of a talk by Mr. James A. Campise, Manager of Information Sciences, Hughes Tool Co., of Houston at the October 27th meeting. Mr. Campise has had many years of experience in computing and data processing; he is one of the outstanding authorities on data processing in the southwest. His subject was well received by the group and an interesting question and answer period followed.



**GULF COAST EXEC. COMMITTEE** (clockwise, from the left): William A. Farrell, Jim Watson, Bob Warren, T. N. Dinning, Duncan Allen, Art Weber, Billy McAninch, Ray Hopkins, Willard Schewe, Dan Chisholm.

An outstanding seminar was held on November 4 at Kaphan's in Houston, under the chairmanship of Dan Chisholm and Bob Warren. Mr. William G. Kast of the Bechtel Corp. presented the program, "Critical Path Method" of scheduling and control of construction projects. So much interest was shown by the 235 men present, that the meeting was extended two hours beyond the original time for adjournment.

On December 1st the Section will hear Mr. Jerry R. Brown of the stockbroker firm of Good-

body & Co. of Houston. His subject will be "The Cost of Capital" and there will be a question and answer period following the presentation.

## Metropolitan New York Section

Section officers for the 1961-62 season are:

Chairman	Stanley A. Gertz
Vice chairman	Robert B. Norden
Secretary	K. M. C. Guthrie
Treasurer	Arthur P. Lothrop

The first general meeting of the season was held on Wednesday evening, September 27, at the Chemists Club, New York City. Program was a forum on cost engineering terminology, "Watch Your Language." It was conducted by I. Bromberg, manager, cost control process plants division, Foster Wheeler Corp. Attendance: 26 members and guests.

Second general meeting, held at the Hotel Shelburne, Wednesday, October 25, featured a talk by Robert J. Nelson, New York sales manager of Thompson Ramo-Woolridge Computers Co., on "Economics of Computer Operations of Process Plants." Mr. Nelson showed a film, "Closing the Loop," which illustrated several of the current applications of digital computers used in process plant operation. Attendance: 23 members and guests.

A panel discussion on "Field Labor Productivity" highlighted the November 15 meeting, held at the Hotel Shelburne. Mr. D. Seltzer of the Lummus Corp., chaired the meeting.

A total of 31 members and 14 non-members were present to hear the critical and outspoken views of Messers. Seltzer, Paul Mayo and Joseph J. Merlino. Program Chairman Mr. J. Brown thanked the panel for an excellent coverage of a somewhat elusive subject.

Some interesting statistics about the membership of this Section were compiled by Bob Norden: 36 members are from contracting organizations; 42 members are from operating companies, and 6 members are from equipment manufacturers.

At a meeting of the Executive Committee it was decided that the Section would admit to membership, free of dues for the remainder of the current fiscal year, any AACE member in good standing moving here from another area, provided they had paid the regional dues required in their previous area. The Committee felt that similar action in other regional sections would be good judgment.

November also marked the publication of the first issue of the section newsletter. Bill Schall and Bob Templeton are co-editors.

Future meetings are scheduled for January 7, February 14, March 13, April 17, May 23.

The mid-day meeting scheduled for January 7th at the Shelbourne Hotel will have as a subject "The Economic Selection of Electrical Equipment."

#### Montreal Section

A luncheon meeting of executive committee and committee chairmen was held at Child's Restaurant on September 27. At this time, responsibility for certain duties in connection with meetings were defined. It was also decided that guest speakers who are not members of the section will be provided at the expense of the section.

President Miller suggested that the section undertake a group project to investigate and report on a topic of interest; the topic agreed upon: An investigation of the problems associated with breakdown of cost accounts, particularly in relation to the different requirements of owners, contractors. Members will be asked to volunteer to serve on a committee set up for this project.

Mr. Hobson has been asked to examine the problems of changing the by-laws to implement the AACE's request for adoption of a standard constitution.

At a second executive meeting, Friday, October 27, at the Laurentian Hotel, Montreal, the revised draft constitution and by-laws were considered briefly. These will be sent to the membership—at least two weeks before the next meeting—for approval.

Two general membership meetings have been held—one, in October; the other, in November. At the October 19 meeting, held at the Naval Officers' Club, R. L. Leuchter chaired a panel on "Development of Quick Estimating Techniques as a Prime Requirement of Cost Engineers Today."

An attendance of 35 members and guests heard Messrs. M. Kilbertus, A. Ducharme, R. S. O'Neill, M. Wajtkowiak and R. A. Leuchter discuss this timely subject.

Charles Hirt, AACE president, was guest speaker at the November meeting. His topic was the broad field of cost engineering and its importance to industry.

#### New England Section

The first membership meeting of the season was held on Tuesday, September 12, at M.I.T. Graduate House, Cambridge, Mass. Clement Dwyer, Maryland Casualty Co., spoke on bonding and insuring costs and problems on the construction job.

The second meeting, held on October 10 at M.I.T. Graduate House, featured H. J. Delamater who spoke on building estimating.

"Critical Path Scheduling" was Mr. Hajad Dillon's subject for the November 13th meeting at the M. I. T. Graduate House. Mr. Dillon is affiliated with the heavy Construction Div. of the Perini Corp. This Corporation has pioneered the development of C.P.M. in the construction field.

The section meets regularly on the second Tuesday of the month.

#### Niagara Frontier Section

September 25 marked the first dinner meeting of the season. Guest speakers J. Brennan and J. R. Hopkins, both of Mauchly Associates, Ltd., spoke on "Critical Path Method" for planning, scheduling and controlling construction and production projects. Attendance: 55 members and guests.

#### Pittsburgh Section

The first meeting of the season was convened on October 11th in the Conference Room of the Mellon Institute.

President Joseph F. Rigatti spoke to the members on the subject of National Committees and asked for volunteers to serve on same. The need for the adoption of a standard constitution was explained to the members and Messrs. Junker, Black and Seekins were appointed to a committee to study the necessary procedure for adoption.

The Section was invited to participate in a meeting of the Pennsylvania Society of Professional Engineers concerning the establishment of an Engineering Center in Pittsburgh.

Mr. C. D. H. Bierman then introduced Mr. J. F. Lovett of Pittsburgh Chemical Co. who was the chairman of a panel composed of Messrs. W. R. Niblock, D. G. Hager, P. M. Serokis, J. W. Mayers and J. B. Allen. All the panelists are with the Pittsburgh Chemical Co. The subject for discussion was "Project Evolution" as practiced by their company.

Dr. James H. Black of the U. S. Steel Co. gave  
(Continued on page 97)

# Minutes of Board of Directors Meeting

## Chicago, Illinois (Edgewater Beach Hotel)

October 25-27, 1961

The meeting was called to order at 9:00 a.m., Wednesday, October 25, 1961 by President Hirt. Officers and Directors present were: Charles R. Hirt, William G. Clark, Thomas C. Ponder, Cecil H. Chilton, Donald I. Meikle, William J. Hegerty, Bernard J. Gaffney, also Edward D. Shanken, Executive Secretary.

By invitation, the following committee chairmen and committee members were present: D. T. Brink, Publicity Committee Chairman; H. A. Chapman, Membership Committee Chairman; E. F. Brummerstedt, Capital Cost Estimating Committee Chairman; H. C. Thorne, Jr., Profitability Committee and 1962 Convention Arrangements Chairman; W. W. Twaddle, 1962 Technical Program Chairman; and Jay M. Gorey, Organization Manual Committee Chairman.

Minutes of previous Board Meeting of June 20-24, 1961 were approved as read.

**Treasurer's Report** by Cecil Chilton indicated the Association is in very good financial condition. Membership dues have exceeded budget. Surplus from Boston (1961) meeting still pending final account, but approximately \$2800.00 is expected.

**Organization Chart** — Hirt presented a revised Organization Chart to reflect new appointments. Audit committee discharged and will be re-appointed when required.

**Report of Vice President and his Committees** — W. G. Clark.

**Planning Committee** — C. A. Miller — No report at this meeting.

**Annual Meetings** — Boston Meeting Report — Surplus of funds about as expected. Complaint of "sales pitch" by some of the Seminar Speakers was handled very well by M. W. Rodgers and repeat sessions were much better. It was suggested that the first session of repeat subjects be monitored by the local committee to check on whether a sales pitch is being given by the speakers.

Three day length of meeting seems satisfactory. Length of individual sessions leans toward longer periods, even up to two hours. Perhaps more sessions should be included covering operating cost control and maintenance cost control.

**Special Consideration for the Host Group** — After some discussion, a motion by Meikle, seconded by Clark, that "Ten percent of the net surplus from a National Annual Meeting be remitted to the Host Regional Section. Net Surplus will be determined by the AACE Treasurer after the approved audit. This remission of surplus funds is to be retroactive and will include: Cleveland, 1958; Houston, 1960; Boston, 1961. Pittsburgh, 1959 Annual Meeting operated at deficit and is not entitled to this remittance. Remittance will be made approximately 30 days after receipt of the approved audit." Motion carried. Chilton will handle these disbursements.

The extent to which the Association should go in including sessions for the Building Trades in the Annual Meeting program will be left up to the Regional Section who will be guided by the desires of the entire membership of AACE. The Planning Committee will be asked to study and submit recommendations on program planning for special interest groups.

It was recommended that the Technical Program for Annual Meetings include sessions of special interest to those in areas where membership drives are currently underway or being planned.

**1962 Plans** — H. C. Thorne, Jr., reported on the plans for the 1962 annual meeting which is to be held in Chicago June 25-27, 1962. The present budget appears satisfactory and attendance of 195 would be the break even point.

Feature Speaker at the Annual Banquet has not been finalized. Special effort should be put on this immediately to obtain a speaker from the list of speakers accepted by the Board.

Arrangements seem satisfactory and a Regional Presidents Reception will be added to permit the Officers and Directors to meet the Regional Section Presidents on a social basis. Therefore, the Regional Presidents Breakfast will not be held this year.

**1962 Technical Program** — W. W. Twaddle presented plans for the Technical Program which were discussed. Several suggestions were made and will be included in the final program.

**Sponsorship of Hospitality Hours at Annual Meetings** — Resolution: The Board does not encourage this and does not solicit this type of sponsorship. The Chicago Regional Section is instructed to cease active solicitation of sponsorship of Hospitality Hours. Clark will handle this with the Chicago group and in the Organization Manual.

**Technical Demonstrations of Equipment and Literature** — In the interest of improving the educational character of our Annual Meetings the Vice President may arrange for appropriate commercial exhibits or demonstrations at the Annual Meetings.

**Pre-Prints of Papers at Annual Meetings** — The Local or Host Section will take care of this for their Annual Meeting. Any 10 pre-prints will be given free to each person registered at the meeting. Additional pre-prints may be purchased at 25 cents each. Reproduction of the papers will be handled by the local group.

**Instruction to Speakers and Authors** — Gaffney will send immediately his copy of the "Authors Guide" to Hirt and Shanken. Shanken will have this reproduced for the use of the Technical Program Committee.

**1963 Annual Meeting** — This will be held at the Sheraton Palace Hotel, San Francisco, California, July 24-26, 1963.

**Future Plans** — No specific plans now. Consideration will be given for a 10th anniversary meeting at the University of New Hampshire.

Delaware Valley has requested consideration for the 1966 meeting and is awaiting a Board decision. Chapman will discuss this with them and report back to the Board.

**Bibliography Committee** — No report available. Shanken was instructed to write each magazine for permission to publish abstracts of technical articles. Shanken will coordinate this effort with Mattiza and Katell.

**Publicity Committee** — Dan T. Brink, Chairman reported that he will get announcements in all Technical Magazines concerning the 1962 Annual Meeting.

**Telephone Listing for AACE** — Brink asked about a local telephone listing, in both the white and yellow pages, to help in publicity for the AACE. He was asked to contact all Regional Sections for their reaction to a local telephone listing. The Board will underwrite, as an experiment, a listing in the Chicago Yellow Pages for 1962. Brink will work out the details with the Chicago Section.

Brink has Publicity Committee members in all Regional Sections. He will try to get the AIChE Publicity Handbook for each of these committee members.

**Publication Committee** — J. G. Hoyt's report is as follows:

"The Chairman of the Publications Committee was unable to attend the Annual Meeting in Boston in June, and asked the Sponsor Director to act for him.

It is understood that there was a shortage of copies of papers presented at the Annual Meeting. The Chairman was unable to get copies of the papers presented until recently, when he was able to borrow on a to-be-returned basis, a set of the papers.

Four papers have been recommended to the Editor for publication. Word has been received from C. J. Keating that the general paper he presented at the meeting is being expanded into three articles, and that *Chemical Engineering* has invited publication in the periodical.

Continued efforts will be made by members of the Publication Committee to assist speakers in getting their papers published."

We must enforce the rule of sending copies of all papers to the Publications Committee Chairman.

**Admissions Committee** — Meikle read Clayton's report. The new application form is being used as well as the new position reference forms.

The forms used by Shanken in checking the education and professional license references on the application were reviewed and minor corrections suggested.

**Membership Committee** — H. A. Chapman, Chairman, presented his plans for future development of this activity. The present committee will be expanded and reactivated. A current membership plan will be developed on the regional level.

**Basic Plan** — Membership drive will be directed at the executive level. Company sponsored memberships will be encouraged. Chairmen of Regional Sections will be asked to re-appoint present membership committee for 1962 to help continuity of the Membership Committee.

Assigned Mission of the Committee

1. Offer consulting help to the Regional Section Membership Committees.
2. Cooperate with the New Sections Committee, when requested, in the geographical areas where work is being done to form new regional sections.
3. Follow-up on non-members registered at annual meetings. Use a special follow-up letter and personal contact with these prospects.
4. Develop and execute plans for membership drives directed at a particular industry or industries. The short-range plan, through 1962, will be directed at the Building Construction industry; in addition, some work will also be started on a campaign directed at pipe-line companies. Long-range plans will be developed to direct recruiting efforts, after the 1962 campaign, to both Public and Private Utilities.

To assist the Membership Committee in their campaigns directed at special interest groups, the technical programs for annual meetings should offer papers to attract attendance from these special groups. For the Chicago Meeting in 1962, efforts

will be made to interest the Building Construction industry and Pipe Line Company people.

**Regional Activities Committee** — Meikle will work on the problem of improving communications between the Board and the Regional Sections.

**Regional Section Charter** — The Charter should put emphasis on Regional Section and Charter in its wording. Shanken will engage professional help and re-design the charter and submit proofs to the Board within 30 days.

**Regional Section Standard Constitution** — All Regional Sections have acknowledged the request to adopt the Regional Section Standard Constitution except Chicago—Midwest. They will be contacted again. Those Regional Sections who have adopted the Standard Constitution are: Gulf Coast, San Francisco, Southern California, and British. Those promising adoption before the end of 1961 are: Delaware Valley, Metropolitan New York, New England, Montreal, Niagara Frontier and Northeast Ohio.

**British Regional Section** — A list of paid-up members has not been obtained. Meikle will follow-up on this immediately.

**Regional Section News Letter** — Dodge requested that each officer and director write a one page synopsis, once each year, for inclusion in the Regional Section News Letter. Meikle will advise Dodge to set up a schedule and due dates for these one-pagers.

**Technical Committee Reports Feed-back** — Meikle will follow-up on the feed-back of material reported by the technical committees to Seekins to see that the local groups are informed of the results or short comings of their activities.

**New Sections Committee** — Detroit (Great Lakes) and Cincinnati are the only active areas now. Minneapolis-St. Paul could get started as soon as Gaffney can find the time to follow through. Baton Rouge and West Virginia have been contacted. A group is being contacted in Miami and Kansas City. The committee needs a contact for St. Louis.

**Technical Activities Group** — Report from Seekins suggested a manual on Capital Cost Estimating and a Cost Engineering Manual and index covering all Technical Committee Activities. The Board is in agreement with much of the proposed Technical Committee Activity. Hirt will correspond with Seekins on specific details of items rejected.

Seekins will serve as requested on the ASME Definitions Committee of Industrial Engineering Division as the AACE representative. Miss Eaves will be kept informed of this activity. Hirt will write Seekins to ask that he be more specific in defining committee assignments and schedules.

**Capital Cost Control Committee** — No report except for Seekins' summary report. It is estimated that Terminology from this Committee could be presented by the 1962 Annual Meeting. The Check List Committee is active.

**Capital Cost Estimating Committee** — E. F. Brummerstedt presented a select bibliography of published articles on this subject. Suggested that a two sentence description be given with each citation. Proposed that this be published periodically in the *Bulletin*. Brummerstedt can get help from Meikle on desired response from Regional Sections in selecting committee members for these technical committees.

**Operating Cost Estimating and Control Committee** — Hegerty reported that 110 replies were received on the recent interest finder survey. These are now being analyzed to plan future action. A report will be forthcoming from Hegerty.

**Profitability Committee** — Assignments have been made in most Regional Sections. Working with definitions and

terminology groups. The Committee met in Boston during the 1961 Annual Meeting and the results of this meeting will be worked-up into a paper for the *Bulletin*.

Consideration is being given to a questionnaire on depreciation that may be submitted to the membership at some time in the future. Hopefully, information on this subject will be obtained from a U. S. Government study made last year so that this additional questionnaire will be unnecessary. Mr. Thorne is following up on this source of information.

**Cost Index Committee** — Hirt reported that correspondence with Seekins indicated that this committee is working on a New Chemical Plant Index, contrary to the prior wishes of the Board. Hirt has advised Seekins to change their assignment back to the original assignment of improving the existing Cost Index Manual.

#### External Affairs Group

**Education** — A letter has been received by Hegerty from Dr. Boyd explaining he has not had time to work on his needs or form his committee.

**Coordination Committee** — Elsie Eaves has requested committee members from each Regional Section. Has representatives from 7 of the 12. Any contact with other Technical Societies should be coordinated with Miss Eaves.

**Nominating Committee** — Will not be required until 1963.

**Executive Secretary** — Shanken will proceed at emergency speed on revision of the Regional Section Charter.

**Membership** according to Shanken is 843 members, 78 associate members, 1 student member, for total of 922 members. 23 applications are pending.

**Council of Engineering Society Secretaries** — Motion by Chilton, seconded by Hegerty that: Shanken join CESS and participate actively in this Society. Motion carried.

**Dues Notices** — Shanken recommended that the annual dues notices be sent out November 15. This is agreeable to the Board.

**Job Descriptions** — Still some work to be done. Will be finalized by Hirt and Shanken.

**Processing of Membership Applications** — Present system will be improved. Shanken and Hirt will confer on best method of handling. They will decide on the type of reproduction equipment which should be purchased for the Executive Secretary's office; authority was granted for such purchase.

**Telephone for Headquarters at AACE** — Suggested that Shanken get an AACE telephone listing and get a private line. Shanken will check into this and report to the Board.

**Bulletin Publication** — Schedule has improved. Still need more technical papers to issue immediately following the Annual Meeting.

**Membership Lists** — Supplemental membership lists (Directory) should not be published in the *Bulletin*. Only list new members and their home town in a column showing new members. Only the June issue will carry a Membership Directory.

**Organization Manual** — Jay Gorey had done an excellent job. Certain portions will require critical review.

**Schedule** — All reviews and comments back to Gorey by November 15, Gorey will send final form to Shanken by December 15, 1961. Publication date — February 1, 1962.

**Printing** — One hundred copies are to be prepared and printed. Bound in ring binder selected by Executive Secretary. Tentative distribution as follows: Officers and Directors (10); Regional Sections (24); Chairmen of AACE Committees (15).

#### Historical Records of AACE

**History** — Shanken will prepare a summary of the first three years including history, founders, etc. Shanken will call on founding members for help. This should be completed for presentation to the Board at its June 1962 meeting.

Shanken and Ponder will prepare folders for 1959, 1960, 1961 which will include: Minutes of the Board Meetings, Report from Executive Secretary, Presidents' Letters, Annual Meeting program, Financial Report, Awards. Annual Reports from all Committees, plus a summary of significant actions and results for the year. These will be gathered and presented to the Board at its next meeting.

**Statistical Records** — Shanken will prepare a list of what circulated to the Board by December 1, 1961. It is suggested that such items as membership by grades at the end of the calendar year and attendance at annual meetings be included in this list.

**Publication of List of Names of Members of Each Committee** — Shanken has solicited these names from each committee. He will ask Director-Sponsors to follow through and get this information from the Committee Chairman under their sponsorship. List to be published in *Bulletin* for December, 1961.

**Federal Tax Exemption Application** — Tax exemption application proceeding according to plans. When exemption is obtained, an information report is to be filed.

**Engineers Joint Council Application** — Application has been filed, received and Hirt and Shanken will meet with EJC in November, 1961.

## News from the Regions

(Continued from page 94)

an interesting and informative talk on "The Use of Economics in the Chemical Industry" at the November 8th meeting.

Members were requested to submit ideas that will stimulate attendance and participation at section meetings. At the Executive Committee meeting which followed the regular meeting it was suggested that a telephone campaign be used to increase membership. Board members were assigned names for contact by telephone.

The next meeting will be held on January 10, 1962.

#### San Francisco Bay Section

Impressed with the efforts which members put into the preparation of papers and seminar material for the Boston technical program, A. L. Horstmeyer, president of the section, plans to appoint each member of the section to a committee to prepare such papers.

In connection with this project, he has prepared a list of 14 possible subjects, including costs of acoustical materials; cutting, drilling, prefabricating and placing wood structural members; rebar fabrication and placing; heating equipment; electrical wiring and illumination.



## RICHARDSON ENGINEERING SERVICES

DETAIL ESTIMATES — PROPOSALS — ENGINEERING ASSISTANCE FOR CONTRACTORS  
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### A VERSATILE SERVICE

**WHAT WE DO:** Prepare competitive detail estimates, write proposals and furnish engineering assistance on new construction, revamps and turnarounds.

**TYPE OF PROJECTS WE WORK ON:** Refineries, chemical plants, papermills, mining and metallurgical plants, waterworks, sewage and waste disposal, powerplants, Industrial Buildings and manufacturing facilities.

**WHO WE WORK FOR:** Contractors only. We work for either the general contractor who ordinarily bids from already prepared drawings and specifications or for the engineering contractor who must bid from basic design data. We will not work for more than one contractor on any one project.

**HOW WE WORK:** We work either on a firm fixed price, an hourly or per diem basis. We will prepare a complete estimate and proposal or portions thereof.

**WHERE WE WORK:** We work either in the contractors office or in our own office. Geographically we cover the United States and Canada.

**TYPE OF ESTIMATORS AVAILABLE:** We are staffed by estimators trained in all phases of industrial plant construction including site preparation, earthwork, piling, concrete foundations and structures, structural steel and steel plate fabrication and erections, electrical distribution, lighting and power wiring, process, utility and service piping including fabrication and erection, dust collection systems, heating, ventilating and air conditioning, electronic, pneumatic and mechanical instrumentation, fireproofing, insulation, painting, equipment selection and installation, and plant startups. In addition we have estimators who specialize in building construction only. All estimators in our employ have successful records in competitive bidding.

**MATERIAL TAKEOFFS:** Takeoffs can be made either on our forms to our routine or on the contractors forms to his routine. All takeoff work is done in a clear and concise manner and all extensions are checked for accuracy. Separate calculation sheets are furnished to show quantities of concrete, structural steel, piping, etc., when takeoffs are made from plot plans and flowsheets.

**SPECIFYING:** While we do no process design, we do have process engineers available to size piping, vessels, exchangers, pumps, heaters, crushers, conveyors, feeders, and other equipment, and to specify materials of construction. They are familiar with all the standards, codes and procedures in use by the refining, mining, papermaking, power generation and manufacturing industries. They can complete flowsheets to show valving, manifolding, headers and other items not normally shown.

**VENDOR CONTACTS:** We are well established with vendors throughout the United States and Canada. We can obtain the lowest possible prices on all types of refinery equipment, mining and material handling machinery and all other components that go into a properly prepared competitive estimate.

**TIMING:** In order that our clients thoroughly understand each project, we set our estimate and proposal completion date well in advance of the actual bid date. This allows adequate time for discussions, checking, pricing adjustments and alternate quotations if required.

**REFERENCES:** Among our references are some of the largest manufacturers and contractors in the world. References submitted on request.

**PERSONNEL RESUMES:** Personnel resumes of all our employees are available and will be submitted on request.

**THREE ECONOMIC CONSIDERATIONS:** 1. Our service offers a dependable source of complete and well defined estimates and proposals. To be complete any good estimate must include the right amount of many items not normally included by estimators unfamiliar with heavy industrial construction. Left out, these items tend to reduce profits and in some cases actually cause a contractor to lose money. 2. Usually the cost involved in our preparation of an estimate and/or proposal is less than a contractors cost because of the concentrated knowledge we can apply. 3. A contractor utilizing our service will find that he will raise his percentage of successful bids and at the same time maintain the highest possible accuracy in estimated material, labor, overhead and engineering costs.

**PROPOSAL PREPARATION:** In preparation of proposals we can include the necessary plot plans, data sheets, flowsheets, schedules and descriptions necessary to properly define the project, protect the contractor and establish good contractor-owner relationships.

**PUT US TO THIS TEST:** Pick the hardest toughest job you can find. Call us in for discussion. Let us show you how we would handle the job. There will be no cost or obligation on your part. We can prove estimating will cost less and that you will get more jobs!

**ALSO AVAILABLE:** Fully experienced construction supervision, field engineers and field office personnel. Write for details.

## Personnel Service

With the objective of increasing the services to our members, the *Bulletin* includes a Personnel Section.

Members will be permitted two free insertions in the "Men Available" section per year.

There will be a charge for insertions in the "Positions Available" section. Write to the Editor, AACE *Bulletin* for additional information.

### MEN AVAILABLE

Accountant, Cost Engineer — university accounting experience, as well as public, industrial, systems, auditing, financial, plant investment and returns seeks challenging position. Write to AACE, Durham, N. H. — File J.

## Technical Papers

Available free, AS LONG AS THEY LAST, to AACE members (\$.50 to nonmembers), by request:

- 1—"Accurate Ways to Estimate Pipe Costs" by W. G. Clark.
- 2—"Computer Speeds Economic Evaluations" by J. F. Adams, W. L. Massey, Jr. and M. Dmytryzyn.
- 5—"Ratio Cost Engineering" by H. C. Bauman.
- 6—"The Cost of Preparing an Estimate" by K. G. Wolfe.
- 7—"Which Depreciation Method is Best" by B. J. Gaffney.
- 18—"Estimating Cost of Compression Plants" by I. Bromberg.
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- 21—"Educational Requirements from the Standpoint of Industry for Future Engineering Graduates" by D. I. Meikle.
- 22—"Project Evaluation by the Time Value of its Use of Money" by E. H. Flewelling, Jr.
- 23—"The Case for Scientific Research in Cost Engineering" by L. R. Shaffer.
- 24—"A Course in Chemical Engineering Economics" by J. Happel.
- 25—"Cost Control in Construction" by W. McGlaun.
- 26—"Project Cost Control" by W. G. Clark.
- 27—"Economic Evaluation of Research Projects" by R. C. Brown.
- 30—"Measuring and Controlling Maintenance Costs" by Raymond I. Reul.
- 40—"Bibliography of Investment and Operating Costs for Chemical and Petroleum Plants, January-December 1959" (Bureau of Mines Information Circular 7966) by S. Katell, J. H. Faber, and J. W. Douglas.
- 41—"Bibliography of Investment and Operating Costs for Chemical and Petroleum Plants, January-December 1960" (Bureau of Mines Information Circular 8035) by S. Katell, J. H. Faber, and M. J. Williams.
- (Copies of technical papers 40 & 41 were sent to all AACE members at the time they were printed.)
- 42—"Estimating Operating Costs for New Ventures" by J. H. Black.

The Association is endeavoring to publish in the *Bulletin* or make available reprints of papers that are related to the field of Cost Engineering. If you are preparing a paper or have presented previous papers in this field please send a copy to the Editor so that it can be included in future surveys of data in this area.

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If you reside near one of the regional sections, contact the president so that you can benefit from the worthwhile activities of your region. If a business trip coincides with a meeting of a section outside your region, you are welcome to participate in any and all activities.

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## Bibliography

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